



Reception Science Teaching and Progression

This document develops the Reception foundations in the whole-school science grid. Children explore their bodies, materials, plants, animals and seasonal change through play, first-hand experiences, stories and discussion. Repeated observation helps them move from noticing and naming towards comparing, asking questions and explaining what they find.

Development Matters and Birth to 5 Matters inform the teaching sequence. ELG links identify contributions to end-of-Reception expectations. Teaching responds to children's interests and starting points, with time to revisit and deepen learning.

Key Knowledge	Key Skills
Body parts and senses help us explore; everyday habits help us care for our bodies.	Observe through available senses and describe what is noticed.
Plants grow and change; growing plants need suitable care.	Observe closely, name features and record changes over time.
Animals have different features; young animals grow and some change form.	Compare living things and sequence familiar stages of growth.
Materials have properties that can be compared; ice and water can change state.	Explore materials, try an idea and describe what happens.
Weather and the natural world change across the seasons.	Return to observations, compare records and notice patterns.
Living things occur in different environments and need care.	Ask questions, use information and share simple explanations.

Autumn teaching and progression

The unit sequence provides connected experiences. Children revisit learning through play and adult interaction, with growing confidence and independence.

Unit	Development Matters and Birth to 5 Matters links	Key science teaching points and vocabulary	Activities and children's choices Continuous provision and teacher-led	Progression and ELG links
Autumn 1 My Body	Development Matters: Reception PSED — personal hygiene and healthy routines; Communication and Language — questions, vocabulary and explanations. Birth to 5 Matters: Physical Development, Health and self-care, Ranges 5–6 — body awareness and increasing independence in everyday care.	Name external body parts, including head, arms, hands, legs, feet, eyes, ears, nose, mouth and skin. Connect seeing, hearing, smelling, tasting and touching with body parts. Notice similarities and differences respectfully. Describe how active play feels and talk about food, water, rest, toothbrushing and handwashing. Vocabulary: body, senses, see, hear, smell, taste, touch, skin, healthy, exercise, rest, clean.	Use mirrors, action songs and body outlines to identify parts. Choose safe objects to explore through available senses and describe them. Compare how the body feels before and after movement. Use dolls and role play to practise care routines; sequence handwashing pictures and explain a step.	Begin with familiar experiences and naming. Develop more precise descriptions and simple reasons for body-care routines. Return to these ideas when comparing people and other animals in summer. ELG contributions: Managing Self — hygiene and healthy food choices; Speaking — sharing ideas using new words. Sensory exploration supports later enquiry.
Autumn 2 Autumn NPP	Development Matters: Reception Understanding the World — outdoor observation and seasonal effects; Mathematics — comparison. Birth to 5 Matters: The world, Range 5 — growth, decay and care; Range 6 — patterns and change in nature. Mathematics, Measures, Ranges 5–6.	Name familiar trees and natural objects encountered outdoors. Describe leaf colour, shape and texture. Notice that many trees lose leaves in autumn while some remain green. Compare weather and changes at the same tree or growing area. Know that weather varies from day to day. Vocabulary: autumn, season, weather, leaf, tree, trunk, branch, seed, fallen, green, brown, smooth, rough.	Choose a tree or patch to revisit. Collect fallen leaves with care and sort them by a chosen feature. Use magnifiers, drawings and photographs to preserve observations. Compare fresh and fallen leaves. Keep a simple weather record and return to an earlier picture to discuss what changed.	Extend body-based sensory exploration to the outdoor world. Move from naming objects to grouping by features and comparing observations made at different times. Seasonal visits continue in winter, spring and summer. ELG contribution: The Natural World — observation and drawing of plants, and understanding seasonal change.

Spring teaching and progression

The unit sequence provides connected experiences. Children revisit learning through play and adult interaction, with growing confidence and independence.

Unit	Development Matters and Birth to 5 Matters links	Key science teaching points and vocabulary	Activities and children's choices Continuous provision and teacher-led	Progression and ELG links
Spring 1 Changing States of Matter NPP — Winter	Development Matters: Reception Understanding the World — natural processes, including melting ice; Mathematics — length, weight and capacity; Communication and Language — explaining observations. Birth to 5 Matters: The world, Ranges 5–6 — materials and change; Mathematics, Measures, Range 6.	Recognise ice as frozen water. Describe water freezing and ice melting back into liquid water. Notice frost or ice when conditions allow and compare with autumn observations. Explore pouring and the properties of familiar materials. Recognise that ice does not disappear when it melts: water remains. Vocabulary: winter, ice, water, freeze, melt, frozen, cold, warmer, solid, liquid, pour, full, empty.	Observe a small ice sample in a tray and revisit it as it melts. Help choose two safe places for similar ice samples and discuss what happens. Use photographs or drawings to show before and after. Explore containers in the water area; use adult-supported freezing to observe the return from water to ice.	Build on recording autumn changes by following a process over a shorter time. Connect a prediction with an observation and begin to explain a change using appropriate words. ELG contributions: The Natural World — changing states of matter; Speaking — explanations. Capacity comparisons develop wider mathematics learning.
Spring 2 Plants NPP — Jack and the Beanstalk	Development Matters: Reception Understanding the World — exploring and describing plants; Mathematics — comparing length; Communication and Language — using information and new vocabulary. Birth to 5 Matters: The world, Ranges 5–6 — growth and observation; Mathematics, Measures, Range 6.	Recognise that a real bean plant develops gradually from a seed. Name roots, stem and leaves, and flowers when present. Care for seedlings with water and light in a suitable place. Compare growth over days and weeks and distinguish story events from observed plant growth. Vocabulary: plant, bean, seed, root, shoot, stem, leaf, flower, grow, water, light, taller, shorter.	Plant beans and choose how to record change through drawings, photographs or adult-scribed talk. Observe roots through a transparent growing container before potting on. Compare plant height using direct comparison or equal-sized units. Revisit the story and use real plants and non-fiction to discuss what can actually happen.	Extend winter before-and-after observations into a longer study. Return to the same plant, describe emerging features and use records to explain change. Growing continues into summer. ELG contributions: The Natural World — observing and drawing plants and understanding change; Fine Motor Skills — care in drawing. Measures support comparison.

Summer teaching and progression

The unit sequence provides connected experiences. Children revisit learning through play and adult interaction, with growing confidence and independence.

Unit	Development Matters and Birth to 5 Matters links	Key science teaching points and vocabulary	Activities and children's choices Continuous provision and teacher-led	Progression and ELG links
Summer 1 Changes and caterpillars NPP — Minibeasts	Development Matters: Reception Understanding the World — observing animals and contrasting environments; Communication and Language — questions and explanations. Birth to 5 Matters: The world, Ranges 5–6 — care, observation and change; Mathematics, Measures, Range 6 — sequencing events.	Identify familiar minibeasts using visible features and notice where they are found. Minibeasts include insects and other small animals. Observe the butterfly life cycle: egg, caterpillar, chrysalis and adult butterfly. Know that caterpillar and butterfly are stages of the same animal. Compare a damp log and a sunny flowerbed. Vocabulary: minibeast, insect, caterpillar, egg, chrysalis, butterfly, wing, leg, antennae, change, life cycle.	Observe caterpillars with appropriate care, using images or non-fiction for stages not seen directly. Sequence photographs and draw changes. Choose a feature for sorting minibeast pictures. Compare findings in two outdoor places, handle creatures gently when appropriate and return them to where they were found.	Use the plant study to recognise another form of growth and change. Compare stages, order observations and explain using evidence. Develop care for animals and awareness of their surroundings. ELG contributions: The Natural World — observing and drawing animals, processes and contrasting environments; Speaking — explaining changes.
Summer 2 Animal Features and Babies	Development Matters: Reception Understanding the World — naming and describing animals and exploring environments; Communication and Language — detailed descriptions. Birth to 5 Matters: The world, Range 6 — comparisons among living things and sharing observations and explanations.	Name familiar animals and their young, such as sheep and lambs or dogs and puppies. Compare features such as fur, feathers, scales, legs, wings, fins and beaks. Recognise that young animals grow and may resemble adults. Compare familiar animals with examples from a contrasting environment and discuss their care. Vocabulary: animal, adult, young, baby, lamb, puppy, grow, fur, feather, scales, wing, fin, beak, same, different.	Choose animal pairs to compare using photographs, models and non-fiction. Match young and adults, explaining visible clues; revisit caterpillars as a contrasting example. Make an observational drawing and describe its features. Compare a familiar garden animal with an animal from a polar or coastal environment using accurate images and shared reading.	Bring together body-part naming, careful observation and life-cycle learning. Move towards explaining a grouping choice and describing more than one similarity or difference. Use information to check an initial idea. ELG contributions: The Natural World — observing and drawing animals and comparing environments; Speaking — using vocabulary to explain.

Learning revisited throughout the year

Seasonal walks, growing and animal observations continue beyond a single unit. Children return to earlier drawings, photographs and ideas to notice changes and explain what they now know. Resources, communication and sensory access are adapted so every child can take part.

Ongoing learning	Knowledge and experiences revisited	Developing enquiry
Seasons and outdoor change	Return to the same tree, growing area and weather record across all four seasons. Compare leaves, growth, ground conditions and animals seen; describe the conditions observed on a particular day.	Notice → describe → compare records → explain a change. Use season names alongside precise observations.
Plants animals and environments	Continue growing beans and noticing local plants and animals. Use books and images to compare a familiar environment with a specific contrasting place, such as a polar coast. Practise care for living things.	Name → identify features → compare → use observations and information to explain similarities and differences.
Materials and natural processes	Revisit water, ice and drying. Explore everyday materials during construction and water play. Offer safe opportunities to investigate shadows, sounds, floating, magnets and movement as children's questions arise.	Explore → try an idea → describe a result → repeat or change an action. Develop vocabulary for properties and cause and effect.
Talking comparing and recording	Use magnifiers, drawing, photographs, objects and adult-scribed explanations. Compare length, weight and capacity in meaningful contexts; count and compare small quantities when useful. Revisit words in new contexts.	Ask → observe carefully → choose a way to show a finding → share an explanation and consider another idea.

The Natural World Early Learning Goal

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Supporting areas and Early Learning Goals

Communication and Language supports questions, discussion and explanations through Listening, Attention and Understanding and Speaking. Managing Self supports personal hygiene and healthy food choices. Fine Motor Skills supports careful drawing and use of small tools. Number and Numerical Patterns contribute when children recognise, count or compare quantities. Comparing length, weight, capacity and time belongs to the wider mathematics curriculum; it is not a separate ELG.

ELGs describe holistic end-of-Reception expectations. The wider curriculum includes exploration, play and enquiry beyond the goals. Birth to 5 Matters ranges overlap and support professional judgement about children's next steps.

Progression and the link to Year 1

Across Reception, children move from exploring familiar experiences and naming what they notice towards observing closely, comparing features, following changes and sharing simple explanations. My Body establishes sensory language; Autumn extends observation outdoors. Winter introduces a visible material change. Plants and caterpillars build sustained observation, while Animal Features and Babies brings together comparison and growth. Repeated experiences strengthen these connections and prepare children to use evidence in Year 1.

Reception foundation	Year 1 unit and development
Autumn and year-round seasonal observation Describe weather, revisit a familiar place and use records to notice change.	Autumn 1 — Seasonal Changes, revisited throughout the year Observe the four seasons, describe associated weather and investigate how day length varies.
Winter and ongoing materials exploration Compare texture, flexibility and other visible properties; describe ice and water changing.	Autumn 2 — Everyday Materials Distinguish objects from materials, name common materials and compare and group their physical properties.
My Body and Animal Features and Babies Name body parts, explore senses and compare visible animal features.	Spring 1 — Animals including Humans Identify common animal groups and diets; describe and compare structures, and identify, draw and label human body parts and associated senses.
Plants and year-round outdoor observation Name familiar plants and visible parts; observe growth and practise care.	Spring 2 and Summer 1 — Plants Identify common wild and garden plants, including deciduous and evergreen trees, and describe basic structures of flowering plants and trees.
Enquiry through every Reception unit Ask questions, observe, sort, try ideas, record change and describe findings.	Across Year 1, with the Summer 2 whole-school project and working scientifically focus Ask simple questions, observe using equipment, perform simple tests, identify and classify, gather and record data, and use observations to suggest answers.

The half-terms organise teaching rather than fixed developmental deadlines. Responsive support and opportunities to revisit learning enable children to build secure foundations for Year 1. Plant and animal growth studies also prepare for the deeper study of life cycles and basic needs later in Key Stage 1.